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# HARNESSING NATURE

*World Conservation Congress 2020  
Special Issue*

*Ecosystem Health for ONE Health*



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Cover photo: Riparian vegetation in the Western Ghats, India (Photo: Deepu Sivadas)

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## Enhancing Urban Biodiversity through Ecosystem Restoration and Rejuvenation of Waterbody at Jamshedpur

Hishmi Jamil Husain

According to different expert's ecosystem services worth USD 125 trillion make human life possible by providing clean water, regulating disease, nutritious food and climate, supporting the pollination of crops and soil formation, and provide recreation and benefits to spiritual benefits. Ecological restoration plays an important role in improving air quality, reduce desertification, stop biodiversity loss, improve urban environmental indicators to provide suitable air quality for communities and their relationships with nature. Healthy ecosystems clean our air and water, maintain soil fertility, regulate the climate, recycle nutrients, and provide food. They provide raw materials and resources for medicines and other purposes. They are at the foundation of all civilization and sustain our economies.

Jamshedpur is situated at the convergence of Kharkai and Subarnarekha Rivers. Subarnarekha is the main river of Jamshedpur. Messrs Julian Kennedy Sahlin of Pittsburg, USA, prepared the first layout of the town. It was designed more or less on American lines with roads cutting each other at right angles. In 1920, Mr Frederick Charles Temple, the Sanitary Engineer to the Government of Bihar and Town Planner, was engaged as the Chief Town Engineer. He created the web of hexagonal dwellings juxtaposed with open, green spaces. In 1936, Major P C Stokes, who was connected with Quetta reconstruction after the earthquake, was invited by the Company to advise on town planning and development, thereby seeding the concept of resilience in the city. At Independence in 1947, Jamshedpur was

the only centre of heavy industry in India. The first Prime Minister of the country, Pt Jawaharlal Nehru, charged Tata Steel to double its steel output to feed the newborn nation's hunger for steel. Thousands of skilled and unskilled labour swarmed to Jamshedpur in search of a livelihood and to contribute to the dream of building India. Dr Otto Koenigsberger, a distinguished architect and town planner, was invited to study the existing conditions and future requirements extensively. His master plan aimed at making it a sustainable city capable of serving the functional and aesthetic needs of a growing population while simultaneously reducing its ecological footprint. Jamshedpur has one of the highest green covers (more than 27 per cent) in India, having 30 big and small community parks covering an area of over 122 hectares. In the twenty years, Tata Steel has planted over 12 lakh trees in town to maintain the air quality and converted 12 wastelands areas into parks.

### CRM Bara Pond Rejuvenation

Cold Rolling Mill (CRM) Bara Pond is located (22°48'36.31" N 86°14'09.90" E) on vast slushy fly ash filled area near Cold Rolling Mill of Tata Steel Ltd in the Bara area of Jamshedpur, Jharkhand, India. The pond comprises three water bodies and serves the purpose of rainwater harvesting, and plays a pivotal role in maintaining the biodiversity of the surrounding area. This water body was fast vanishing due to administrative negligence and poor upkeep. In 2019 Tata Steel commenced the accountability of rejuvenating this water body as part of their

commitment to long term water sustainability. Tata Steel's efforts in the last two years have led to the creation of an ornamentally designed reservoir with beauty and splendour, and the twin disappeared water bodies have been restored to an attractive pond in a 5.6 hectares area.

### Strategic Reasons

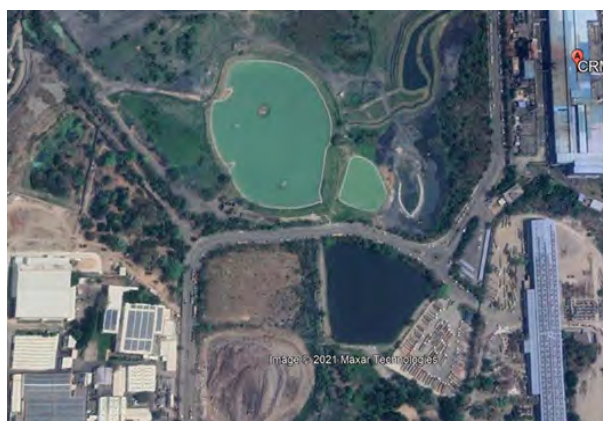
Tata Steel's strategic promise to improve water sustainability is that freshwater consumption



Google earth view of Bara Area in 2003



Google earth view of Bara Area in 2018



Google earth view of Bara Area in March 2021

is reduced to 50% in the last ten years. The management of Tata Steel has viewed the situation and took prompt action to rejuvenate water bodies in Jamshedpur Town. This will help

in water harvesting for the town and reduce water pollution in the area. As part of Tata Steel's eco-friendly initiative, it was envisaged to rejuvenate a dying water body and restore the same to its pristine glory. Accordingly, the ancient water bodies have once again been restored to their pristine glory. Scientific surveys were carried out by the consultants involving experts of national repute in the field of rainwater harvesting and watershed management. The consultant prepared a detailed feasibility report and Master Plan for rejuvenation of a few selective water bodies with detailed engineering of the structures and cost estimate. After several rounds of meetings and detailed discussions with the executives of Tata Steel about the benefits of the project in sustaining the eco-environment, the location at CRM was selected for execution. Community participation was critical for accomplishing the development, and the residents were involved in creating a win-win situation. The local community was sensitized about the intrinsic benefits of the transformation of the lake how it would protect the water environment.

### Environmental Reasons

The vanishing ponds have created an unpleasant and unwelcome impact on the environment. The contaminated water started flowing to the nearby Subarnarekha River. Lack of moisture content and depleting water table led to the decline in nearby plants. Dynamic growth of invasive plants and undergrowth provided conducive conditions for a diversity of creatures and venomous snakes. Indigenous and migrant birds are immobile adorning the area. The terrain condition of the catchment and surrounding area of these lakes are such that contaminants immediately reaches the water body without much hindrance. As a result, the consistent accumulation of silt and other contaminants had reduced the storage capacity of the lake and blocked the recharge of the groundwater table. The groundwater table started dwindling alarmingly, resulting in the drying of drinking water structures in the downstream areas.

### Contribution of CRM Bara pond Rejuvenation

The implementation of pond rejuvenation results in accumulating about 82000 cubic



meters of rainwater, plummeting pollution and refining the biodiversity in the area. The flow of contaminated water has been treated and stopped eventually. Total dissolved solids of water have been reduced, and yield of water extraction structures increased, and the groundwater table in the region started rising post project implementation. The biodiversity conservation and green cover improved with the help of the plantation of 5000 plants of different species to attract birds and pollinators. Pollinators are attracted to water and plants, so biodiversity increased in the project area. Due to improvements in water availability, there is a thriving population of fishes that



CRM Bara Pond After Rejuvenation

attract migratory birds. The hygienic and clean environment added beauty and charm and created a calm and pleasing feeling for the people who live around the pond. This also helps in improving the livelihood and engagement with different stakeholders. The project execution has proved that underprivileged community members can be transformed in the presence of a harmonious water project. Improved water availability has helped in improving the income of the local community members through fishery activities. Implementation of the project has created a winning situation for all stakeholders and nature.

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